

Abstract of the Disclosure

[0079] A set of shields usable in a sputter reactor that is used to form a tantalum-containing layer on a substrate. The tantalum-containing layer is formed using a physical vapor deposition technique wherein a magnetic field in conjunction with an electric field function to confine material sputtered from a tantalum-containing target within a reaction zone of a deposition chamber. A lower shield includes plural perforations through it to allow processing gas to pass from gas inlets in back of the outer shield to the processing space. An inner shield fits within the outer shield and shields the perforations from the substrate. An upper shield is disposed between the inner shield and the target and may be electrically floating.